

## ABSTRACT

- 5           Haptic feedback interface devices using electroactive polymer (EAP) actuators to provide haptic sensations and/or sensing capabilities. A haptic feedback interface device is in communication with a host computer and includes a sensor device that detects the manipulation of the interface device by the user and an electroactive polymer actuator responsive to input signals and operative to output a force to the user caused by motion of the actuator. The output
- 10   force provides a haptic sensation to the user. Various embodiments of interface devices employing EAP actuators are described, including embodiments providing direct forces, inertial forces, and braking forces.